

REMARKS

The claims have been amended by rewriting claims 28, 29, 31, 33 and 34, and submitting new claims 36-44, and 45-52. This last group of claims, 45-52, are identical to original claims 1-8 and are in effect a reintroduction of original claims 1-8. Claims 27-52 remain in the application.

Applicants respectfully request that the rejection of the claims presented be reconsidered and withdrawn in light of the amendments above and the discussion which follows and that the application be found in condition for immediate allowance.

Administrative Matters

Applicants request that the Examiner ensure that future correspondence be delivered directly to the Inventor at the Correspondence Address of record in Longwood, FL. The Inventor would like the option of acting *pro se* if appropriate.

Telephonic Interview

A telephonic interview was granted by the Examiner on 28 October 2005. The focus of the interview was to fully understand the Examiner's rejection of claim 28; to propose an amendment and reach agreement on the allowance of claim 28, at least as far as the presently cited art is concerned; and to address the potential reintroduction of a subset of the originally filed claims which were both allowed in the first Official Action and cancelled by subsequent amendment.

Regarding claim 28, Applicants noted that the only outstanding rejection was for failing to comply with the written description requirement of 35 USC 112, first paragraph. Otherwise, there were no other obviousness or novelty issues.

At the time of the interview, Applicants had yet to find support for the term *terminals* in the phrase "input terminals," and felt that an amendment was appropriate at that time. Applicants have maintained the proposed amendment in this response. For the record, this amendment is not to be taken as an admission that support for the term *terminals* does not exist, but rather that Applicants were able to easily find support for language of similar scope and that Applicants were keenly focused on moving the case to immediate allowance.

Applicants then pointed out precisely where support existed in the specification and drawings as originally filed claim 28 as proposed in amended form. The substance of such support is included herein.

The Examiner agreed.

Applicants attempted to attain a commitment for allowance of claim 28 in its amended form due to the thorough nature of the Examiner's search, which Applicants greatly appreciate. It appeared to Applicants that a better search could not be made as the inventor is an expert in the art and he was not aware of the latest art which was cited. The Examiner noted that she could not fully commit to allowance since she must always allow for the possibility of an unforeseen reference from another search. However, except for in that condition, the Examiner did agree to allow claim 28 as amended over the cited art of record (Kurtin).

The focus of the interview then turned to the potential reintroduction of a subset of the original claims. These claims were both allowed in the first Official Action and cancelled by subsequent amendment due to a written-description-requirement objection of the specification, for failing to provide support for the claims.

It is the understanding of the undersigned that in prior communications with the Examiner, the Examiner had requested a showing of correspondence for each of the claim terms found in the original claims with the features shown in figure 2 and that such a showing proved difficult due to the recirculating nature of the signals of the present invention.

In the present interview (and on that basis), Applicants expressed agreement with the objection as regards the original apparatus claims. Yet Applicants pointed out that the original process claims could be reintroduced even if such strict correspondence could not be easily shown since it was Applicants' belief that figures are not at all required for process claims. Assuming such, Applicants proposed one of two possible resolutions to address the original objection by either (1) showing support in Figure 1 (an exemplary showing was attempted during the interview) or by (2) amending the specification to include a description of the originally filed process claims in such a careful manner so as to not introduce new matter.

The Examiner agreeably indicated that if Applicants can show that drawings are not required for process claims and if proper support is shown in figure 1 or provided through such amendment to the specification (since originally filed claims form part of the specification and hence no new matter would be added by such amendment), then full and proper consideration would be given to the reintroduction of such original process claims, and if all is in order, withdraw the original objection.

The telephonic interview then drew to a close.

Claim Rejections

The 35 USC §112 Rejections

Claim 28

Claim 28 stands rejected under 35 USC 112, first paragraph, as failing to comply with the written description requirement. The Examiner asserts that support for the phrase "wherein the audio input signal is monaural and applied to an input terminal of each channel" is lacking.

As mentioned in the interview summary above, the amendment proposed in the interview has been entered herein. As agreed, the amendment to this language is as follows: "wherein the audio input signal is monaural and applied to ~~an input terminal of each channel~~ each of the dual channels."

Support for this newly introduced language can be found in the specification on at least page 19 lines 18-19; page 21 lines 9-11, which refers to the center channel 41C Shown in figure 2 (center channel 41C being a monaural channel); and page 21 lines 21-25. Additionally, as can be appreciated from figure 2, monaural center channel 41C routes through input gain block 42C and switch 13, when switch 13 is in the oppositely toggled position from that shown in figure 2, and from there can be seen to route to **each of the dual channels** as inputs to the left and right summing networks 43L and 43R.

Claim 28 has been recast in independent form to place this claim in condition for immediate allowance and as discussed in the interview, Applicants request the same. By this amendment, Applicants assert that the scope of Claim 28 has not been narrowed in any respect.

The 35 USC §102 Rejections

Claims 27, 29-32 and 35 stands rejected under 35 USC 102 (b) as being anticipated by United States patent No. 4, 237, 343 to Stephan Kurtin (hereinafter referred to as a "Kurtin"). Applicants respectfully submit that these rejections are improper.

It is Applicants' understanding that a rejection on the basis of anticipation under 35 USC 102 is appropriate where each limitation of a claim at issue is found in a single prior art reference. See Kalman v Kimberly-Clark Corp., 218 USPQ 781 at 789, (Fed. Cir. 1983). The requirement is for an element-by-element and limitation-by-limitation comparison of the recited structure, functional and/or operative steps with what is found in the reference sought to be applied. The rejection is proper where such an element-by-element comparison finds identity for each element and limitation within the four corners of the reference.

It is respectfully submitted that the rejection made in the Official Action falls short of this standard. Further, it is respectfully submitted that no rejection can be framed on the basis of the references cited, whether applied or not, which will support a refusal to allow the claims as presented, without regard for whether that possible rejection is grounded on anticipation under 35 USC 102 or obviousness under 35 USC 103.

Claim 27

Applicants contend that the Official Action fails to find identity with at least the following bold-highlighted portions of claim 27:

27. A process for enhancing ambience in an audio signal output derived from an audio signal input in a dual channel audio ambience extraction circuit, the process comprising cross coupling of audio signals in one channel with audio signals in another channel, each of the cross-coupled signals being **attenuated** and delayed by no more than a Haas delay time during the cross coupling **before being applied in a feedback path** to a summing input of an opposite channel to mix with subsequent audio signal inputs to that channel, **all of the attenuated and delayed signals being continuously applied** to outputs of the extraction circuit **during the cross-coupling process**.

Thus, claim 27 expressly recites language which requires that the attenuation is to be applied before returning the signal to a feedback path to be mixed with subsequent audio input signals and that the attenuation be continuously applied during the cross coupling process.

Kurtin fails meet these limitations. For example, the Examiner has attempted to apply low pass filters 22 and 23 of Kurtin's figure 1 as meeting the attenuation limitations set forth in the claim. Applicants respectfully assert that this is in an improper application of low pass filters 22 and 23. Applicants take issue with any attempt to read low pass filters 22 and 23 as attenuators since these do not provide attenuation to the signals of interest. Through the use of low pass filters 22 and 23, as it evident from figure 1 and the description, it was the intention of Kurtin to allow lower frequency content of the input signal which is 6KHz and below to pass through the filter unattenuated and enter Kurtin's ambience and reverberation generator. Applicants have taken careful study of Kurtin and respectfully assert that nowhere does Kurtin disclose

that low pass filters 22 and 23 act as attenuators, quite the contrary. Rather, as Applicants suspected, Kurtin discloses that these low pass filters are performing anti-aliasing to remove high frequency content which may have been introduced by the digital conversion process. In support of Applicants assertion, Applicants respectfully direct the Examiner's attention to the following portion of Kurtin:

Kurtin, at col. 18 lines 60-62, states:

Output low pass filter 22 is similar to filter 16 and removes
the sampling irregularities prior to output mixing.

Clearly this is anti-aliasing and not attenuation.

Nor can any of the mixers be regarded as attenuators since, as expressly required by the claims, the attenuation must occur prior to the mixing (i.e. **"before being applied in a feedback path** to a summing input of an opposite channel to mix with subsequent audio signal").

Nor can low pass filters 16 and 17 be called upon to fit the bill. Firstly because, as established above with respect to low pass filters 22 and 23, low pass filters 16 and 17 do not attenuate the signals of interest. Secondly because, as can be appreciated by closely inspecting Kurtin's figure 1, low pass filters 16 and 17 are located outside of the recirculation path (the path by which outputs are fed back to inputs in continuum). In other words, the functions performed by low pass filters 16 and 17 are not being continuously applied during the cross coupling process.

Applicants respectfully assert that the element-by-element identity of structure and function necessary for a supportable anticipation rejection are absent not only from the Examiner's argument but also from the reference. Should the Examiner disagree, it is respectfully requested that the Examiner provide specific pointers to the location in the references of a teaching of attenuating a signal before returning the signal to a feedback

path to be mixed with subsequent audio input signals wherein the attenuation is continuously applied during the cross-coupling process.

For the reasons given above, it is the position of Applicants that Claim 27 defines an invention which is patentably distinct from the reference cited. Therefore, this claim is believed to be in condition for immediate allowance and Applicants request the same.

Claims 29, 30 and 35

With respect to claims 29, 30 and 35, these claims are believed to be in condition for immediate allowance due to their dependence on independent claim 27 which is believed to be allowable.

Further, claim 29 has been amended to change the term –audio processor– to the term –extraction circuit– to maintain consistency with other claims. Support for –extraction circuit– can be found in the independent claim. No new matter has been added. By this amendment, Applicants assert that the scope of Claim 28 has not been narrowed in any respect since these are interchangeable terms.

Claim 31

With respect to claim 31, this claim is believed to be patentable due to its dependence on claim 29 which is believed to be allowable.

Additionally, Applicants have amended claim 31 to further clarify and more distinctly claim Applicants' invention. In particular, Applicants request that the Examiner take specific note of Applicants' inclusion of the phrase “. . . one and only one . . .” in the

newly amended subject claims replacing the phrase “. . . at least one” Claim 31 as amended is repeated here for convenience, clarity, and context.

31 (currently amended). The process of claim 29 and including inverting the audio signals in ~~at least one~~ one and only one of the channels thereby establishing an inverted channel and a non-inverted channel wherein the inversion of the audio signals is applied prior to a cross-coupled feedback which includes feeding back the inverted audio signals to a summing input of the non-inverted channel and feeding back audio signals from the non-inverted channel to a summing input of the inverted channel.

Applicants also note that support for inverting the audio signals in one and only one of the channels as claimed above is found in at least figure 2. As can be appreciated from Applicants' figure 2, the left channel shows an inverter 45 (inverted channel), while the right channel shows no such inverter (non-inverted channel). The cross coupled feedback is also shown in at least figure 2. Thus, no new matter has been added.

Applicants have added this phrase to distinguish over Kurtin in the sense that Kurtin does not show one channel being treated differently than the other as regards the inversion of the audio signals. Applicants have taken careful study of Kurtin and can only find perfect symmetry between the left channel and the right channel with regard to inversion. Applicants have found a potential description in the specification for inversion in association with mixers 14 and 15 shown in Kurtin's figure 1. Yet, mixers 14 and 15 are always described in tandem and, therefore, Applicants believe there is no supportable basis for a position that Kurtin discloses inversion in one channel and not in the other as required by the newly amended claims.

The amendments made to claim 29 further clarify a distinction over the cited art. The amendments clarify that the inversion alternates channels as the cross coupled feedback runs its course in association with the attenuation expressly recited in the independent claim.

For these additional reasons, Applicants believe claim 31 defines patentable subject matter and respectfully request that this claim be passed to issuance.

Claims 32 and 33

With respect to claims 32 and 33, these claims are believed to be in condition for immediate allowance due to their dependence on independent claim 29 which is believed to be allowable.

Note that claim 33 has been amended. The purpose of the amendments to claim 33 are solely to correct spelling and punctuation informalities and are seen by Applicants as cosmetic. Applicants assert that the amendments to Claim 33 are not narrowing amendments made for a reason related to the statutory requirements for a patent that will give rise to prosecution history estoppel. See *Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co.*, 122 S. Ct. 1931, 1840, 62 U.S.P.Q.2d 1705, 1712 (2002). Applicants point out that the Supreme Court in *Festo* noted that a cosmetic amendment would not narrow the patent's scope and thus would not raise the estoppel.

The 35 USC §103 Rejections

Claims 33 and 34

Claims 33 and 34 stand rejected under 35 USC Section 103(a) over Kurtin in view of U.S. Patent 5524054 to Jens Spille (hereinafter "Spille"). In the rejections, the Examiner appears to have embarked on the tests for obviousness as outlined in *Graham v Deere*. Applicants contend these rejections are improper.

Applicants contend that the Examiner has failed to present a proper *prima facie* case of obviousness. As will be explained in more detail below, the *prima facie* case is improper because the Examiner's statement of motivation would not motivate an artisan to combine these two particular references; and because the combination, when made, would be bizarre, nonsensical, and nonfunctional.

To establish a foundation for the argumentation which follows, it is presumed that the Examiner is relying on Spille to introduce various claim limitations which the Examiner admits are missing from the primary reference (Kurtin). These limitations include left and right surround sound input signals. Spille provides left and right surround signals, however, these are MPEG encoded surround signals. Applicants respectfully request that the Examiner make note that it is well known that MPEG encoded surround signals already contain ambience encoded therein. Applicants believe that the MPEG document *ISO 11172-3 Compatible Low Bit Rate Multi-Channel Audio Coding and Conventional Stereo Coding at Lower Sampling Frequencies*, ISO/IEC JTC1/SC29/WG11 N0403, MPEG93/479, 11 June 1993, will clarify Applicants' assertion.

So what's improper about the proposed combination? What's improper is that the teaching of Kurtin is to synthesize ambience from standard stereo inputs, i.e., dry inputs (see first two sentences of Kurtin's Abstract). Yet, the surround inputs of Spille already contain the ambience Kurtin seeks to synthesize from standard stereo inputs. Applicants assert this is bizarre and nonsensical. The teachings clash. To better see

the bizarre and nonsensical nature of the proposed combination, a direct analogy can be made to a process or a machine for making chocolate. The machine would be designed to accept milk and cocoa beans as input and produce milk chocolate as output. It would be just as bizarre and nonsensical to attempt to input finished milk chocolate into the inputs of that machine. Therefore, the rationale offered for combining the teachings of Kurtin with Spille does not meet the requirements set out by Board of Appeals and Interferences, that, sources of rationale supporting a rejection under 35 USC 103 must be logical and convincing. *Ex parte Clapp*, 227 USPQ 972 (Bd. Pat. App. & Inter. 1985) (examiner must present convincing line of reasoning supporting rejection); and *Ex parte Levengood*, 28 USPQ2d 1300 (Bd. Pat. App. & Inter. 1993) (reliance on logic and sound scientific reasoning).

Further, Applicants assert that the resulting combination would produce unsatisfactory results, at best, and cause Kurtin to malfunction at worst. Applicants assert that the resulting sound from inputting surround signals (already containing ambience encoded therein) would result in a muddy and overly ambiguous sound. Moreover, such an attempt would cause the combination to malfunction because the calibrations set for room size in the ambience simulation would be incorrect. That is, the simulated room size would always be larger than indicated on a dial or display. E.g., in room size simulations, such as those described in Kurtin col. 6 lines 15-17, the apparent size of the phantom auditorium being simulated would no longer be determined by the amount of delay time set.

Applicants also assert that the Examiner's statement of motivation would not lead an artisan to combine these particular references. The Examiner asserts that artisans would be motivated to combine these references since Spille discloses that surround speakers provide improved realism of sound ambience. Applicants assert this is not the case. An artisan having Kurtin and Spille before them would see no reason to combine

because Kurtin already provides surround outputs and contains surround speakers (Kurtin's figure 10). Kurtin is not lacking in any way with regard to providing surround ambience.

Therefore, since a *prima facie* case of obviousness has not been made, Applicants respectfully request that the 35 USC 103 rejection be withdrawn and that claims 33 and 34 be passed to issuance.

Please note that claim 34 has been amended to depend from claim 33 rather than claim 32.

New Claims

Claim 36

Newly introduced independent claim 36 includes all of the limitations of independent claim 27 and further includes the following newly added limitation:
". . . delayed by a delay amount which is about equal in both of the dual channels"
In context, this new language is included immediately below in bold highlighted text.

36 . A process for enhancing ambience in an audio signal output derived from an audio signal input in a dual channel audio ambience extraction circuit, the process comprising cross coupling of audio signals in one channel with audio signals in another channel, each of the cross-coupled signals being attenuated and **delayed by a delay amount which is about equal in both of the dual channels** and which is no more than a Haas delay time during the cross coupling before being applied in a feedback path to a summing input of an opposite channel to mix with subsequent audio signal

inputs to that channel, all of the attenuated and delayed signals being continuously applied to outputs of the extraction circuit during the cross-coupling process.

Applicants emphasize that the feedback path extends the Haas delay in multiples of individual delays that are always less than the Haas time and are of about the same delay value in each recirculation. For example, see

Specification page 16 last paragraph - page 17 first paragraph:

The multiple delayed terms form what acousticians call "Haas kicks". In this invention, the Haas kicks significantly extend the total length of the fusion zone of any source to a time equal to the sum of all the delays of that source (as long as the attenuations are sufficient). For example, if **each delay is 30 ms**, the time between the first and second repeat of a source is only 30 ms, which is within the normal Haas limits, though the total delay between the original source and its second repeat is now 60 ms. In the present invention, each succeeding Haas kick is placed in the opposite channel from its own "source" (the preceding term), thereby further spreading and "opening up" the total decoded ambience, diffusing it, and helping to unmask the ambience by locating it in a different position than the source. Utilizing Haas kicks in this novel way maximizes the psychoacoustic power of the Madsen effect.

Applicants point out that support for this newly added limitation can be found in the specification and the originally filed claims on at least page 18 lines 20-21, in which it states "... In the preferred embodiment, all the initial delays are equal in length, that is,

D1 = D5 = D9 . . .” referring to the first time through the recirculation for all of the channels. Support may also be found on page 22 line 26 and page 16 line 26. The originally filed claims 6 and 7 also provide support. These claims are repeated here for convenience and clarity. Note the added bold highlighting indicating the supportive language.

6. A process for enhancing ambience in audio source signals in accordance with claim 2 in which the **second audio signal is delayed about 30 milliseconds** to form the third audio signal.

7. A process for enhancing ambience in audio source signals in accordance with claim 6 in which the **first audio signal is delayed about 30 milliseconds** to form the tenth audio signal.

Significantly, the second and first signals are being delayed by a delay amount which is about equal. Note that these two signals, which were first introduced in cancelled original claim 1, correspond to the two initial signals for each of the dual channels as shown in figure 2 at 41L and 41R (the two stereo inputs, one to each channel).

As claim 36 includes all of the limitations of independent claim 27, Applicants incorporate herein by reference each and all of the arguments set forth above with respect to independent claim 27.

Additionally, Applicants assert that the newly added limitation which specifies a delay amount “. . . which is about equal in both of the dual channels . . .” firmly establishes novelty as defined in 35 USC 102 and as has been established in the courts with respect to the cited art of record including Kurtin.

Kurtin teaches just the opposite. Kurtin teaches that the delay values for each of his left and right channels shouldn't be equal and should preferably occur in a ratio of relatively larger integer values such as 5:8. Kurtin even goes as far as to disparage low integer ratios such as 1:2 and 2:3 (e.g., col. 3 lines 7-13).

In support of Applicants' assertion that Kurtin's delays are disparate and therefore do not meet the newly added "... about equal ..." limitation, Applicants respectfully direct the Examiner's attention to Kurtin at the indicated column and line numbers indicated below. Note that Bold emphasis has been added and that the pertinent text for each of the column and line numbers is included below for convenience and clarity.

Kurtin, at col. 12 lines 37-39, states:

A single control is utilized for setting both delays inasmuch as the **shorter delay (L channel) is always maintained at 5/8 of the longer delay (R channel)**. Two digit BCD up/down counter 506 is used to set the delay, its output count being the longer delay in milliseconds.

Kurtin, at col. 3 lines 7-13, states:

In the presently preferred embodiment of the invention described herein the **ratio of the delay times in the two channels is maintained at 0.625, (or 5 to 8),** but satisfactory results can be obtained over a range of about 0.55 to about 0.75, **preferably avoiding those ratios which are integral factors of low integers; e.g., 0.667.**

Kurtin, at col.2 lines 61-68 (and specifically lines 66-68), states:

One of the novel aspects of the present invention is the use of only two delay means to create a large number of simulated reflections of each sound. The first of the simulated reflections appears some adjustable time after the

initial sound, followed by other reflections **spaced closer and closer together as time proceeds. This is accomplished by using different delay times in the two channels.** Since the Processor output resulting from a momentary input sound signal is a series of signals which have passed through each of the delay means various numbers of times (because of cross coupling between the channels), making the least common multiple of the delay times relatively high results in few coinciding echoes.

Kurtin, col. 4 lines 36-61 (and specifically lines 36-40), states:

It is preferred that the two delay times be relatively incommensurate, that is, have a relatively high lowest common multiple, for the reason that there will be fewer echoes which coincide in time if such is the case. This can be illustrated by assuming that the delays are in the ratio of 0.5 with the delay times in the two channels (called L and R) being 10 and 20 milliseconds respectively. The first simulated reflection signal will appear at the output of the processor 10 milliseconds after a signal is fed to the input of the L channel of the processor. A portion of the L channel input is fed to the R channel input (as will be described later) so that a second simulated reflection signal will appear at the output of the R channel 20 milliseconds after the initial signal input. There will also be a simulated reflection signal 20 milliseconds after the start due to a signal fed back through the L channel delay a second time. It can easily be seen that a ratio of 0.5 between the delay times in the two

channels will lead to many such coincident simulated reflection signals.

In contrast, if the ratio is 0.625 (say delay times of 10 and 16 milliseconds respectively), the first time two simulated echo signals will be coincident will be 80 milliseconds after the initial signal is introduced, and there will consequently be many fewer coincident echoes.

Contradistinctively, the newly introduced limitation in new claim 36 of "... about equal..." corresponds to about a 1:1 ratio having the lowest common multiple possible, namely about 1. This is well outside of the range taught by Kurtin of 0.55 to 0.75.

Thus, having established that Kurtin's delays must differ, and therefore that Kurtin fails to meet the limitations of newly added claim 36, Applicants assert that the element-by-element and limitation-by-limitation identity of structure and function necessary for a supportable anticipation rejection are absent from the Kurtin reference in particular and the art of record in general.

Should the Examiner disagree, it is respectfully requested that the Examiner provide specific pointers to the location in the references of a teaching of delaying by an amount which is about equal in both of the two channels (in combination with the other limitations of the claim).

Even if one were to take the more liberal view that the Kurtin patent might be a reference for an obviousness rejection, support necessary for such a rejection is absent from the reference.

For an obviousness rejection, the Examiner would have to apply the analysis of Graham v Deere, 383 US 1 (1966), relying (in this instance) upon a single prior art reference and pointing to a supposed motivation for modifying that single reference. It is respectfully submitted that this -- even if attempted by the Examiner -- remains an insufficient ground for rejection.

The Graham v Deere test for obviousness under 35 USC 103 is the subject matter of Section 2141 et seq in the Manual of Patent Examining Procedure. To briefly restate, the three inquiries, in order, are to determine the applicable prior art, then determine the differences between that art and the claimed invention, and then determine whether a person of ordinary skill in the applicable art would know to make the modification necessary to arrive at those differences in view of the prior art applied.

As has been stated by the Court of Appeals for the Federal Circuit in considering matters on appeal from the Board of Appeals within the Patent Office, obviousness is a question of law (the Court citing Graham v Deere), but this determination occurs in the context of a factual inquiry regarding the scope and content of the prior art. This factual inquiry examines what a reference would have taught or suggested to one of ordinary skill in the art at the time the of the invention (the Court citing Northern Telecom v Datapoint Corp., 908 F.2d 931, 15 USPQ2d 1321). The Court has cautioned against focusing on the obviousness of the differences between the claimed invention and the prior art rather than the obviousness of the claimed invention as a whole as 35 USC 103 requires (citing Hybritech, Inc. v Monoclonal Antibodies, Inc., 802 F.2d 1367, 231 USPQ 81) and against the use of hindsight reconstruction of what is disclosed in a prior art reference (citing Grain Processing Corp. v American Maize Products Co., 840 F.2d 902, 5 USPQ2d 1788). The Court has quoted approvingly from its decision in In re Fritch, 972 F.2d 1260, 23 USPQ2d 1780, in which it said:

The mere fact that the prior art may [emphasis added] be modified in the manner suggested by the Examiner does not make the modification obvious unless the prior art suggested the desirability of the modification.

On the latter point, the CAFC has said that the Patent Office, in determining the obviousness of a claimed invention that combines known elements, must determine whether there is something in the prior art as a whole to suggest the desirability, and thus the obviousness, of making the combination (citing Lindemann Maschinenfabrik GmbH v American Hoist and Derrick Co., 730 F.2d 1452, 221 USPQ 481).

It is the burden of the Examiner to establish why one having ordinary skill in the art would have been led to the claimed invention by the reasonable teachings or suggestions found in the prior art, or by a reasonable inference to the artisan contained in such teachings or suggestions. See In re Sernacker, 702 F.2d 989, 995; 217 USPQ 1, 6 (Fed. Cir. 1983). The reviewing court for the Patent Office requires proof by evidence in order to establish a *prima facie* case when the proposition at issue is not supported by a teaching in a prior art reference, common knowledge or capable of unquestionable demonstration. See In re Knapp-Monarch Co., 296 F.2d 230, 232; 132 USPQ 6, 8 (CCPA 1961) and In re Cofer, 354 F.2d 664, 668; 148 USPQ 268, 271-272 (CCPA 1966).

No such attempt is made, and, indeed, it is Applicants' position that no such attempt can succeed.

Further, Applicants respectfully assert that any attempt to combine Kurtin with a secondary reference in an attempt to make a *prima facie* case of obviousness would be an inappropriate attempt since, as has been established above, Kurtin teaches away

from the invention and since the Examiner's combination would have to contain delays of about equal value, and Kurtin teaches away from delays of about equal value. See MPEP 2145.

For the aforesaid reasons, it is the position of Applicants that Claim 36 defines an invention which is patentably distinct from the reference cited, whether applied or not, under the tests of both 35 USC 102 and 35 USC 103. Should the Examiner conclude otherwise, it is respectfully requested that the Examiner's arguments be clarified in any next following Official Action in order that Applicants may more clearly understand the element-by-element identification (if the rejection is under 35 USC 102) and/or the teaching which suggests obviousness of any combination of references (if the rejection is under 35 USC 103).

Claim 37

With respect to claim 37, this claim is believed to be in condition for immediate allowance due to its dependence on independent claim 36 which is believed to be allowable. Additionally, this claim includes all of the limitations of claim 28 which applicants believe to be in condition for immediate allowance.

Claims 38 and 39

With respect to claims 38 and 39, these claims are believed to be in condition for immediate allowance due to their dependence on independent claim 36 which is believed to be allowable.

Claim 40

Claim 40 is believed to be in condition for immediate allowance due to its dependence on independent claim 36. Additionally, Applicants hereby incorporate by reference the arguments made above with respect to claim 31 as to inversion in "... one and only one ..." of the dual channels. As described therein, Applicants contend that there is no supportable basis for a position that Kurtin discloses inversion in one channel and not in the other as expressly recited in these claims (31 and 40).

Claims 41 and 42

With respect to claims 41 and 42, these claims are believed to be in condition for immediate allowance due to their dependence on independent claim 38 which is believed to be allowable.

Claim 43

With respect to claim 43, this claim is believed to be in condition for immediate allowance due to its dependence on independent claim 42 which is believed to be allowable.

Claim 44

Claim 44 is believed to be in condition for allowance due to its dependence on independent claim 36 which is believed to be allowable.

Further, claim 44 includes a new limitation for a narrow range of operation in which, from the vantage point of one of ordinary skill in the art, unexpected results occur and are maximized. This claim expressly recites "... wherein the delay value for each

of the dual channels is about 30 milliseconds. . . .” This range of about 30ms is where the present inventor discovered the magic of maximal extraction of the Madsen effect.

The patent act awards letters patents to encourage disclosure in the useful arts so that discoveries can become known and improved upon. The public benefits greatly by such disclosure. But where in the prior art is there a teaching that recirculatory cross-coupled feedback of about 30 milliseconds in both channels of a dual channel system yields the dramatic results achieved by this invention? Where is the beam of light that would lead an artisan looking to extract existing ambience, and not create new ambience, to the process herein disclosed? Have artisans even been aware that amplification of the Madsen effect is possible? The undersigned asserts that it is the present inventor, Robert A. Katz, that provides that beam of light and a preferred embodiment. The claimed process greatly increases ambience extraction because the initial delay in both channels of about 30ms is the maximum possible before the Haas curve goes downhill. Note that, as mentioned in the Objects and Advantages section of Applicants’ specification, Madsen himself actually cautioned against using delays longer than about 15 ms. It is the present inventor that discovered that up to 30 ms in cross-coupled feedback configuration works much better and does not produce audible problems when implemented according to the preferred and alternate embodiments.

Accordingly, for the aforesaid reasons, Applicants believe claim 44 defines patentable subject matter and respectfully request allowance of this claim.

Claims 45-52

New claims 45-52 have been added and are identical to original claims 1-8. The addition of these claims via the present amendment represents a reintroduction of these claims. Note that although the status identifier is given as *new*, these claims are

presented exactly as originally filed and could be labeled *original* if not for the new claim numbers and established office procedures. These are the subset of the original claims referred to above in the interview summary.

These claims were both allowed in the first Official Action and cancelled by subsequent amendment due to objections related to the specification and drawings. The specification was objected to for failing to provide proper antecedent basis for the claimed subject matter. It is the understanding of the undersigned that the Examiner had requested a showing of correspondence between the language in the claims and the features shown in figure 2.

As previously mentioned in the interview summary, Applicants concur with the objection as regards the original apparatus claims since apparatus elements must be shown in the figures as a matter of standard office practice. However, Applicants respectfully assert that no such requirement exists for process claims.

In support of Applicants' assertion, Applicants respectfully direct the Examiner's attention to the following sections of the MPEP wherein excerpts from each section are included immediately below for convenience:

MPEP 608.02 Drawing [R-2], section III

An OIPE formality examiner should not treat an application without drawings as incomplete if drawings are not required. A drawing is not required for a filing date under 35 U.S.C. 111 and 113 if the application contains:

(A) at least one process claim including the term "process" or "method" in its introductory phrase; ...

MPEP 601.01(f) Applications Filed Without Drawings

... It has been USPTO practice to treat an application that contains at least one process or method claim as an application for which a drawing is not necessary for an understanding of the invention under 35 U.S.C. 113 (first sentence). The same practice has been followed in composition applications. Other situations in which drawings are usually not considered necessary for the understanding of the invention under 35 U.S.C. 113 (first sentence) are: ...

Given the above, Applicants feel it is proper to reintroduce this subset of the originally filed process claims.

Two possible resolutions were presented during the interview and found generally agreeable to the Examiner for addressing the original objection. These two included either (i) showing support in figure 1 or (ii) amending the specification to include a description of the originally filed process claims in such a careful manner so as to not introduce new matter. At the present time, given that drawings are not required for process claims, Applicants have found it to be more expedient to amend the specification and have chosen that route. Accordingly, Applicants have updated the summary section as described above in the section entitled *Amendments to the Specification*. Applicants trust that the Examiner will find that the amended summary section closely adheres to original claims 1-9, even though only the first eight of these claims have been reintroduced as newly added claims 45-52. Since originally filed claims form part of the specification, and since the present amendment closely adheres to original claims 1-9, Applicants assert that no new matter has been introduced by this amendment to the specification.


Early and Favorable Notice of Allowance Requested

By each and all of the aforementioned and entered positions, Applicants assert that all claims stand ready for allowance as to proper form and supporting basis, and as all rejections and objections have been traversed or rendered moot.

Applicants therefore request the Examiner remove each and all of the rejections and objections, and respectfully request entry of the Amendment and reconsideration of all Claims, as amended, hereunder. Applicants request an early and favorable action on the present Application and a timely Notice of Allowance.

The Examiner is invited to contact the undersigned at the telephone number indicated below for clarification of any positions presented herein. Note, however, that the inventor, Robert A. Katz, wishes to remain the primary contact for this application. Robert A. Katz can be reached at the telephone number of record which the undersigned believes to be (407)831-0233.

Respectfully Submitted,



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